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## ISDN-PRI to T1-CAS Conversion using the Adtran Atlas 800

### 1. Overview

This application note addresses the integration of a PWT Mobility Server system to a PBX that does not support PRI connections by using an Adtran Atlas 800 to convert between an ISDN-PRI(5ESS) link on the Mobility Server system and a T1-CAS link on the PBX side.

### 2. Technical Discussion

Some older PBXs will support T-1 CAS but will not support PRI fully. Ie: The Siemens/Rolm 9005 rel PBX.

### 3. Solution

#### Hardware connections

For this example – all software modifications pertain to the following HW configuration:

Adtran 10BaseT port connected to laptop PC using CAT5 cable.

Adtran NTWK 1 port connected to T1-CAS interface on PBX side using CAT5/3 cable.

Adtran NTWK 2 port connected to ISDN PRI(5ESS) interface side of the Mobility Server using CAT5/3 cable.

NOTE: Cables that connect the Adtran NTWK connections to the PBX/Mobility Server must swap transmit and receive pairs. The Adtran box comes with 1 such cable so another must be made or ordered from Adtran.

#### Setting up the Adtran box for Telnet connection

Set the IP address from the keypad on the front of the Adtran box – open the menu select in the following sequence  
2. config 0. Sys Ctrl 1. Ethernet 1. IP address.

Enter 172.16.9.2 for the IP address, and leave the default subnet mask of 255.255.255.0 the same.

On the Laptop PC - In network settings – change IP address to 172.16.9.1 with subnet 255.255.255.0

Install the Adtran software from the disk that comes with the box.

Once installed, open the Adtran telnet software atnet.exe and login using default password “password”

#### Adtran box configuration

MODULES CONFIGURATION

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In the modules menu, select sys ctrl menus/ configuraion  
Prt 1 corresponds to NTWK 1 on the back of the Adtran box, Prt 2 is NTWK 2.  
For each NTWK connection set the appropriate Frame –  
For T1-CAS select D4 (NTWK 1)  
For T1-PRI select ESF (NTWK 2)

The parameters for both ports should be as follows:

Prt	Port Name	Frame	Code	Tx Yel	Tx PRM LBO	LB Accept	Pulse Density
1	T1/CAS	D4	B8ZS	On	Off	0 dB Accept	Off
2	T1/PRI	ESF	B8ZS	On	Off	0 dB Accept	Off

Assuming that the T1 CAS will be the network side and the T1-PRI connection to the Mobility Server is the user side the Dial plan will be set up as follows.

## DIAL PLAN CONFIGURATION

Select Dial Plan from the main menu.  
The following options are displayed.

Network Term  
User Term  
Global Param

## SET UP THE T1 CAS link – NETWORK SIDE

Select Network Term

The data configuration should be as follows:

Slot            0)Sys Ctrl            - If using additional modules, the slot number is entered here.  
Port            1) T1/CAS            - the name of the port  
Signaling       RBS                    - Bit Robbed Signalling

Select Outgoing Number Accent List       - [\$]

Set the following parameters

Source ID = 0  
Accept Number = \$       - this allows all numbers to pass through from the network side  
Search = Primary  
Data 64, 56K, Audio, Speech = Enabled  
Treat Calls As       = As Received

Leave Outgoing Number Reject List at default to allow all calls to go through

Select Interface Configuration and set the parameters as follows:

First DSO                    = 1  
Number of DSOs = 23  
DSOs available should show all!'s. If not then delete all mappings from the Map menu

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Signalling Method = E&M Wink  
DID Enabled = 5 - this is the number of digits expected from the network side  
DID # prefix = --  
Strip MSD = none  
Sorcel ID = 0

## **SET UP T1-PRI LINK -- USER SIDE**

Select User Term

The data configuration should be as follows:

Slot 0) Sys Ctrl  
Port 2) T1/PRI  
Signaling PRI

Select Incoming Number Accent List - [\$]

Set the following parameters

Source ID = 0

Accept Number = \$ - this allows all numbers to pass through from the user side

Search = Primary

Data 64, 56K, Audio, Speech = Enabled

Treat Calls As = As Received

Leave Outgoing Number Reject List at default to allow all calls to go through

Select Interface Configuration and set the parameters as follows:

Switch Type = Lucent 5E - Assuming that the Mobility Server system is set as T15ESS user side

First DSO = 1

Number of DSOs = 23

Ntwrk Spec. Fac - Voice = Normal

Ntwrk Spec. Fac - Data = Normal

Called Digits Transferred = All

Outgoing Caller ID = Send as provided

Sorcel ID = 0

Swap ANI/DNIS = Disabled

The Adtran box is now configured to convert between the Mobility Server 5ESS PRI link and the PBX T1-CAS link. Verify operation by placing test calls.

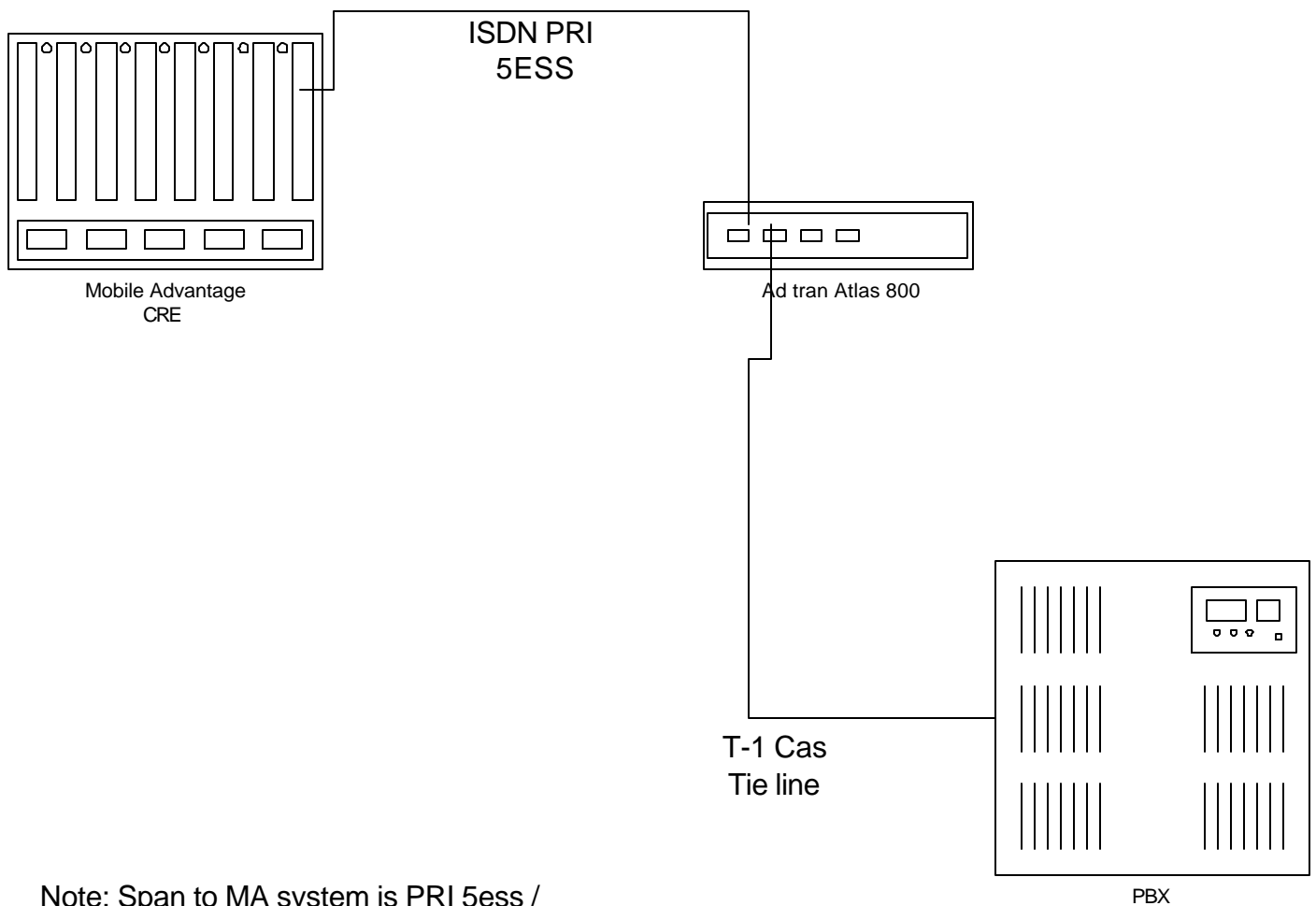
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## 4. Reference

Adtran Atlas 800 User Manual – Adtran Part Number 1200180L1  
Mobility Server Installation and Configuration Manual.

Interconnect drawing for Mobile Advatange and Adtran Atlas 800



Note: Span to MA system is PRI 5ess /  
Span to PBX is CAS (Tieline option)  
Adtran Atlas does a protocol conversion  
between PRI and CAS